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Case report

Male breast cancer after finasteride therapy for benign prostate hyperplasia

Jui-Ming Liu [a], Yang-Jen Chiang [a,b,*], Chen-Lin Chi [c], Yung-Feng Lo [a], Chih-Yuan Chou [a]

[a] Division of Urology, Department of Surgery, Chang Gung Memorial Hospital, Taoyuan, Taiwan
[b] College of Medicine, Chang Gung University, Taoyuan, Taiwan
[c] Department of Pathology, Chang Gung Memorial Hospital, Taoyuan, Taiwan

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ABSTRACT

Finasteride has been used for the treatment of benign prostate hyperplasia (BPH) for years, but some side effects, including male breast cancer (MBC), have been reported. We report a case of breast cancer in a male patient who received finasteride therapy for BPH, and to our knowledge, our report is believed to be the first in Taiwan. The patient was a 59-year-old man who received finasteride therapy for BPH for 4 years. He found a palpable mass in his left breast 2 months prior to diagnosis. Ultrasound-guided core biopsy showed invasive ductal carcinoma. A simple mastectomy was performed followed by chemotherapy with tamoxifen.

1. Introduction

Finasteride is a type II 5α-reductase inhibitor that blocks the conversion of testosterone to dihydrotestosterone. Finasteride is used for the treatment of benign prostate hyperplasia (BPH) and androgenetic alopecia. Male breast cancer is a rare side effect of finasteride. Here, we reported the case of a 59-year-old man with breast cancer during finasteride therapy, and a review of the literature.

2. Case report

A 59-year-old man visited our department for microscopic hematuria during physical checkup in 2005. In addition, he complained of dribbling and incomplete emptying when voiding for a long time. He did not have a medical history of other diseases including diabetes mellitus and hypertension. He also had no family history of cancer or hereditary disease. Digital examination revealed moderate enlargement of the prostate with a smooth surface. Ultrasound examination showed that the volume of prostate was 28.1 cm^3. The prostate specific antigen (PSA) level was within normal limits. The patient was administered tamsulosin 0.2 mg once daily (QD). He was regularly followed-up at our department. We initiated administration of finasteride 5 mg QD in March 2006; then the dose of finasteride was reduced to 2.5 mg QD because of decreased libido in March 2007. The condition improved after reducing the dose of finasteride. We had followed the prostate volume (every 6 months in the first year) which was 21.3 mL and 21.1 mL in March 2007 and October 2007, respectively. The PSA level (examined every 3 months) did not show an obvious increase between 2007 and 2010. However, he found a palpable mass over his left breast and went to our general surgical department in March 2011. Physical examination showed a 1 cm movable nodule in the left upper outer quadrant of the breast in 2 o'clock position and 0.5 cm from the nipple. Neither discharge nor nipple retraction was noted. Breast sonography revealed a well-defined tumor measuring 1.3 cm in the retroareolar area of the left upper outer breast (Fig. 1). Ultrasound-guided core biopsy showed invasive ductal carcinoma. Simple mastectomy of the left breast was performed smoothly. Grossly, a 1.4 cm white, firm with lobulated tumor was noted (Fig. 2). Histopathologic finding was infiltrative nests and neoplastic glands of intermediate grade ductal carcinoma with microcalcification (Fig. 3). Finally, the condition of the patient was diagnosed as left breast intraductal carcinoma, T1cN0M0, Grade I, estrogen receptor: 3+, progesterone receptor: 3+, Her2: 2+. Administration of finasteride was discontinued. The patient was administered adjuvant chemotherapy with tamoxifen.

3. Discussion

The incidence of breast cancer is lower in men than women at about 1.0/100,000 man–years.[1] The median age of men at diagnosis

* Corresponding author. Division of Urology, Department of Surgery, Chang Gung Memorial Hospital, 5 Fu-Shing Street, Gueishan, Taoyuan 333, Taiwan.
E-mail address: zorro@cgmh.org.tw (Y.-J. Chiang).

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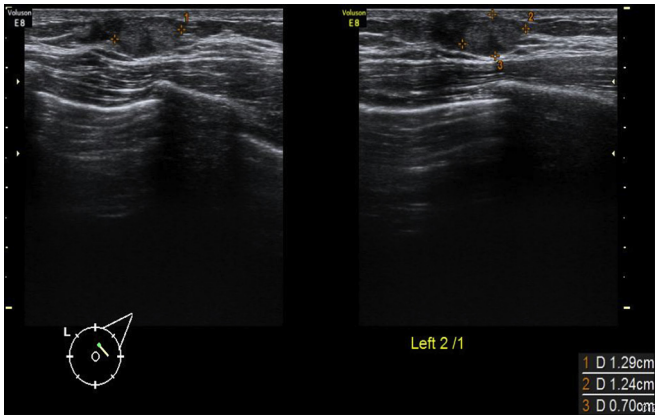

Fig. 1. Breast sonography reveals a 1.3 cm well defined tumor in left upper outer breast retroareolarly.

of breast cancer is 68 years compared to 63 years in women.[2] Men with breast cancer have a lower survival rate than women because of older age at diagnosis, more advanced stage at diagnosis of disease, and lack of awareness.[3]

The risk factors for MBC include diabetes mellitus, orchitis/epididymitis, Klinefelter's syndrome, and gynecomastia. Painless subareloar mass is the most common symptom. In addition, other symptoms such as discharge or bleeding, and nipple retraction may occur. Similar to female breast cancer, MBC is treated with surgical management, radiation, and chemotherapy.[4] Most men with MBC are treated with either simple, radical, or modified radical mastectomy.[5] There is no strong evidence to support postmastectomy radiation therapy of MBC.[6] Adjuvant chemotherapy with tamoxifen showed a significant improvement in 5-year survival (61% vs. 44%).[7] The status of relative estrogen excess or androgen deficit increases the risk of breast cancer in both women and men.[8] Finasteride inhibits type II 5α-reductase, which converts testosterone to dihydrotestosterone. Finasteride shrinks androgen-dependent prostate tissue by the above mechanism. This process may alter estrogen/androgen ratio and may increase the risk of breast cancer or gynecomastia. A total of 50 BPH patients with MBC have been reported worldwide.[9] A strong correlation between finasteride and MBC is based on a study by the Medical Therapy of Prostatic Symptoms.[10] This study included 3047 men consuming 5 mg finasteride, 8 mg doxazosin, of a combination of 5 mg finasteride and 8 mg doxazosin, and placebo. Of these 3047 men, four had breast cancer (3 in the finasteride group and 1 in the combination group). The incidence (4/3047) was higher than that in the general population (1.0/100,000 man–years). BPH patients with finasteride

Fig. 2. Grossly, a 1.4 cm × 1.1 cm × 0.6 cm white, firm, and lobulated tumor of left breast.

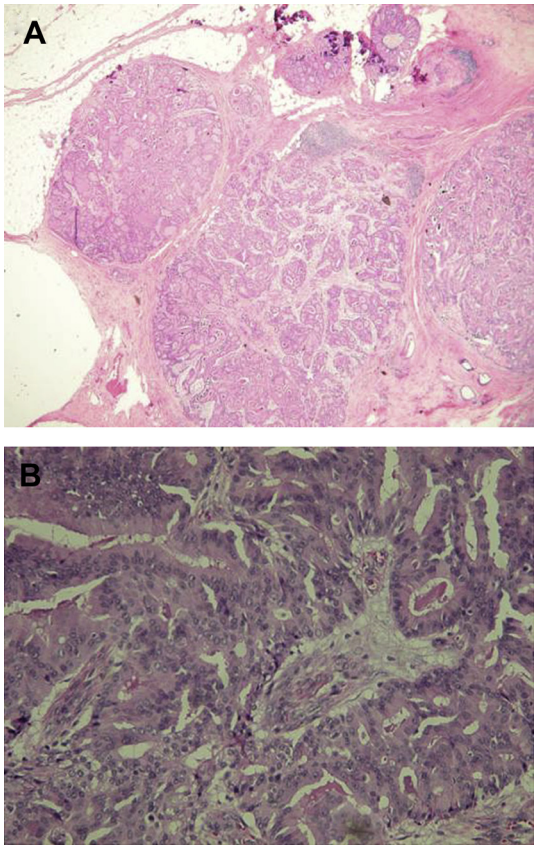

Fig. 3. (A) Tumor cell infiltration with neoplastic gland of left breast (hematoxylin and eosin stain, 40×). (B) Tumor cells infiltrating as solid nests with moderate nuclear pleomorphism of left breast (hematoxylin and eosin stain, 200×).

therapy should be educated for self-examination of breasts. In addition, physicians should perform further studies in such patients who have symptoms of breast cancers.

Conflicts of interest statement

The authors declare that they have no financial or non-financial conflicts of interest related to the subject matter or materials discussed in the manuscript.

References

1. Gradishar WJ. Male breast cancer. In: Harris JR, Lippman ME, Morrow M, Osborn CK, editors. *Diseases of the breast*. 2nd ed. Philadelphia: Lippincott; 2000. p. 661–7.
2. Rayson D, Erlichman C, Suman VJ, Roche PC, Wold LE, Ingle JN, et al. Molecular markers in male breast carcinoma. *Cancer* 1998;**83**:1947–55.
3. Erhan Y, Zekloglu O, Erhan Y. Invasive lobular carcinoma of the male breast. *Can J Surg* 2006;**49**:365–6.
4. Onami S, Ozaki M, Mortimer JE, Pal SK. Male breast cancer: an update in diagnosis, treatment and molecular profiling. *Maturitas* 2010;**65**:308–14.
5. Wang J, Kollias J, Marsh C, Maddern G. Are males with early breast cancer treated differently from females with early breast cancer in Australia and New Zealand? *Breast* 2009;**18**:378–81.
6. Yoney A, Kucuk A, Unsal M. Male breast cancer: a retrospective analysis. *Cancer Radiother* 2009;**13**:103–7.
7. Ribeiro G, Swindell R. Adjuvant tamoxifen for male breast cancer (MBC). *Br J Cancer* 1992;**65**:252–4.
8. Roussouw JE, Anderson GL, Prentice RL, LaCroix AZ, Kooperberg C, Stafanick ML, et al. Risks and benefits of estrogen plus progestin in healthy postmenopausal women: principal results from the Women's Health Initiative randomized controlled trial. *JAMA* 2002;**288**:321–33.
9. *Post-marketing reports of male breast cancer*. UK MHRA Assessment; April 2010.
10. McConnell JD, Roehrborn CG, Bautista OM, Andriole Jr GL, Dixon CM, Kusek JW, et al. The long-term effect of doxazosin, finasteride, and combination therapy on the clinical progression of benign prostatic hyperplasia. *N Engl J Med* 2003;**349**:2387–90.